

of red on the base of the feathers of the forehead: "iris white" (*Meek*).

Hab. Fergusson Island and S.E. New Guinea.

The above-mentioned characters, already pointed out by me as distinguishing the S.E. New Guinea birds, have been deemed sufficient by Mr. Hartert to separate them as belonging to a subspecies.

[To be continued.]

VI.—*On the Birds of the Island of Formosa.*

By W. R. OGILVIE-GRANT and J. D. D. LA TOUCHE.

(Plates III. & IV.)

THE present paper, which, so far as we are aware, contains a complete list of all the species of Birds known to occur on the Island of Formosa, is based on a remarkable collection made by the well-known traveller and naturalist, Mr. Walter Goodfellow, on Mount Morrison and some of the neighbouring peaks of Central Formosa, during the months of January, February, and March 1906.

On finding that Mr. J. D. D. La Touche, who has visited and made collections of birds in both the north and south of Formosa, was also engaged in preparing a list of the birds known to occur on that island, I suggested that we should combine our work, and to this he kindly assented.

A long letter received from Mr. Goodfellow with the collection contains such an excellent account of his adventurous journey that I feel that I cannot do better than repeat the story in his own words. He writes:—"I am not very satisfied with the Formosan collection. Formosa is the most difficult country to collect in that I have yet visited and the *most* uninteresting. No one can imagine the difficulties one has to put up with, and I should never have been able to get into the interior at all, had it not been for your letters of introduction. The Japanese allow no one into the savage territory, but the truth is that no one could go there

without an escort. Last year there was a great deal of fighting and a number of Japanese were killed by the savages. Now they have drawn a cordon of police-outposts and alarm-stations round the whole of the mountainous interior from one end of the island to the other, and have shut off the savages from raiding the Chinese villages along the foothills, and wherever camphor is collected on the outlying hills they have also established police-stations.

“I evidently went to Formosa at the wrong time of the year, but I am still in doubt as to which season would be the best for the mountains. In the South, possibly from November to the beginning of January, and again perhaps from the middle of March to the end of April. Even then one would be sure to encounter much bad weather. English missionaries, who have lived there for thirty years or more, tell me that for months at a time in the summer the mountains are quite invisible, and this is certainly the case during the winter. January and February are quite out of the question, for the weather is then extremely severe and the snows come down very low. The summer (S.W. monsoon) is the wet season, and I could see that certain trails and ravines I ascended would be quite impossible at that season, and even the savages informed me that it was then very difficult to get about. I started from Tainan (formerly Taiwanfu) in the first week of January, and went about forty-five miles up the line by train to Daksui. From there I went a ten or twelve mile trolley-journey to Rinkiho (Chinese: Lim-ki-po). All the places have two names, Japanese and Chinese. Thence I started on foot to the last Chinese village, Ghi-ou-rog, twenty-two miles distant. The next day's journey took me eighteen miles into the mountains, to the first savage village of Nama-ka-bang, at an elevation of about 2500 feet. The fourth day I arrived at Tompo (a second savage village, belonging to a different tribe), not a long journey, but a very difficult one; and the fifth day from Tompo to Racu Racu, the highest inhabited village, near to Mt. Morrison, was also a short but frightfully difficult journey. On the sixth day I made a very long and fatiguing

journey from Raeu Raeu to a spot on Mt. Morrison at an elevation of 9000 ft. There we were practically on the range which is called Mt. Morrison, and formed a camp down in the ravine, just over the slope which forms the foreground in the photograph I enclose (text-fig. 7, p. 154). We rested here one day, and on the seventh day started, before daylight, for the summit, returning to camp the same night. Had we not ascended the mountain on that day we should not have been able to do so, for the next day winter-weather set in, with rain and snow, which came down lower and lower until we were snowed and frozen out of our camp. We stayed at this camp ten or twelve days. Here I got the Fire-crested Wrens (*Regulus goodfellowi* Grant) and the few other birds which are labelled 'Mt. Morrison, 9000 ft.' Birds were very scarce, and it was possible to go a whole day without so much as seeing or hearing one. Higher than this, in ascending the mountain, I saw no sign of bird-life whatever. On the grassy slopes seen in the photograph at 9000 ft. (text-fig. 7, p. 154) I shot the first of the three brown Finches (*Carpodacus incertus* Grant). It seemed really a waste of time to remain up here, for I was not adding to the collection at the rate of even a bird a day. Besides, as it had been snowing for two days, the savages would not stay longer with us, and had much more snow fallen we should not have been able to persuade them to return and carry down our baggage. So we struck our camp and went down to the highest village of Raeu Raeu at about 6000 ft. On our way there I met with a bad accident. A different tribe of savages to those who were with us had set a trap in our trail and, as I was leading, I got one spear right into my instep and another wound on the upper side of the foot. On account of the quantity of water we were continually obliged to cross and the slippery nature of the rocks, I was wearing light shoes with woven string soles, and the spear went right through the canvas and deep into the instep. The consequence was I was laid up for nearly three weeks without being able to put my foot to the ground. During this time I employed various Japanese policemen to shoot birds for me, but they were either bad shots or did

not like climbing about the steep mountains; they also wasted too much ammunition, and almost invariably brought

Text-fig. 7.



SUMMIT OF MOUNT MORRISON, 13,880 ft.

in only the commonest birds, which were too much knocked about to skin, so that I was obliged to give them up. I had thus twelve policemen, who formed my escort, doing nothing.

When I could get about again, I found Racu Racu was not a bad place for birds, but it was disappointing to find that a great number of the lowland species were met with there in spite of the cold, for the snow had followed us down and was lying on the mountains a little above the village.

“You will see that the Barbet (*Cyanops nuchalis* Swinh.) was fairly numerous at Racu Racu, and even at 8000 ft. where there was snow. I had hoped that the severe weather might drive all the birds down to us from the highlands, and probably to some extent it did so, for many of the birds I found at Racu Racu might not be obtainable there in the summer, but it brought none of those species down that I had obtained at our highest camp, between 9000 and 10,000 ft. After apparently exhausting the avifauna of Racu Racu, I was determined, in spite of bad weather, to go up higher once more, and we camped out in a ravine near the S.W. front of Mt. Morrison between 8000 and 9000 ft. We had a fine day for our ascent, but it rained all night, and during the eight days that I remained there I was only able to go out collecting once, for about three hours. A thick, wet fog prevailed the whole of the time, and this obscured everything, so that for a day at a time it was impossible to see a yard in front of one. Wearied out with nothing to do in this gloom and with everything wet through, we were glad to get away and went from there to the Ho Ho Mountain, two days' journey further west. We had one week of beautiful weather, succeeded by ten days of rain and fog; thus ten more days were wasted. During the rest of my stay we had alternate days of wet and fine. The same kind of weather prevailed on Kiew-kong-chin, but with rather a larger proportion of wet days, which were always accompanied by thick fog. On looking at my diary I see that on more than half of the days of the three months I spent in the mountains it was impossible to do any collecting on account of the weather.

“I fully expected to find a Crossbill and a Bullfinch in the higher pine-forests, but I saw nothing resembling either of them. The savages know every bird up there and have

names for them all, so I drew a head of a Crossbill and asked them if they had ever seen any bird like that, but they said no. Still there may be both Crossbills and Bullfinches on some of the other mountains. There was only one highland bird of which I did not obtain a specimen, and that was a Dipper (*Cinclus marila* Swinh.). It was a black bird with apparently a brown head and no white or other marking about it whatever. I saw it at 9000 ft. in a torrent-bed on Mt. Morrison. I hope the Jay may prove to be new. When I shot the first Pheasant I really thought I had found a new species, but of course it was Swinhoe's. It was disappointing to find it so high up. You will see two feathers from the tail of another Pheasant, which is doubtless new (*Calophasis mikado* Grant). It was only on the day we were leaving the mountains that I found these in the head-dress of a savage who had come to carry our baggage. He said he had killed it on Mount Arizan and that it was rare. From enquiries I have made, I believe Arizan would be a much better collecting-ground than Mt. Morrison. It is nearly as high (over 13,000 ft.), more of a single mountain, I believe, and covered with fine forests. I could never see the mountain, but it was not far from where we were. Had I gone there it would have necessitated refitting, which would have been an expensive undertaking, as I had to feed all the police and two interpreters (Japanese and savage), as well as the large number of savages required to carry the needful baggage.

“I just escaped the big earthquakes in Formosa, for I arrived in Kagi from the mountains the day afterwards, and many people were killed where I had spent the previous night, at Rinkiho. The shocks continued, several a day, until I left the island.”

Though Mr. Goodfellow states that he is dissatisfied with the collection that he made, he has really no reason to be so, as will be seen by those who read the following pages. To have discovered ten new species of birds is sufficiently satisfactory, and when we consider how remarkable some of these species are and the great difficulties with which he had to contend, I think that our readers will congratulate him very heartily on the successful results of his journey.

The great majority of the birds collected represent forms peculiar to Formosa, and the following is a list of the novelties he obtained:—*Xanthopygia affinis*, *Ianthia johnstoniæ*, *Suthora morrisoniana*, *Actinodura morrisoniana*, *Trochalopteryx morrisonianum*, *Proparus formosanus*, *Yuhina brunneiceps*, *Regulus goodfellowi*, *Carpodacus incertus*, and *Calophasis mikado*.

Several other species, such as *Microcichla scouleri*, *Ægithalus concinnus*, *Anorthura fumigata*, and *Cryptolopha fulvifacies*, were observed for the first time in Formosa.

So far as is at present known, the following families of Passeres are not represented in Formosa:—*Nectariniidæ*, *Dicæidæ*, *Certhiidæ*, *Artamidæ*, and *Eurylemidæ*; while among the Picarian groups no representatives have been discovered of the *Bucerotidæ*, *Meropidæ*, *Coraciidæ*, *Podargidæ*, and *Psittacidæ*. Representatives of some of these families may and probably do occur, but the list is worthy of special attention, now that our knowledge of the highland avifauna of Formosa is more complete, for in many respects the Avifauna of the Himalaya is similar to that of the mountains of Formosa.

The following is a list of the principal papers and memoirs dealing with the ornithology of Formosa:—

- R. SWINHOE, Journal N. China Branch Royal Asiatic Society. Shanghai. No. ii. pp. 145-164, 228-230 (1859).
 „ Ibis, 1860, pp. 357-361.
 J. GOULD, P. Z. S. 1862, pp. 280-286.
 R. SWINHOE, Ibis, 1863, pp. 198-219, 250-311, 377-435.
 „ Ibis, 1864, pp. 361-370, 424-429.
 „ Ibis, 1865, pp. 353-359, 538-546.
 „ Ibis, 1866, pp. 129-138, 292-316, 392-406.
 D. G. ELLIOT, P. Z. S. 1870, p. 406.
 R. SWINHOE, P. Z. S. 1871, pp. 337-423.
 H. J. ELWES, P. Z. S. 1873, pp. 666-667.
 R. SWINHOE, Ibis, 1877, pp. 473-474.
 F. W. STYAN, Ibis, 1893, p. 470.
 H. SEEBOHM, Ibis, 1895, pp. 211-213.
 J. D. D. LA TOUCHE, Ibis, 1895, pp. 305-338.
 „ „ Ibis, 1898, pp. 356-373.
 J. GOULD, Birds of Asia (1850-1883).
 Catalogue of the Birds in the British Museum (1874-1893).
 A. DAVID & E. OUSTALET, Oiseaux de la Chine (1877).

The best and most modern work on the island is :—

JAMES DAVIDSON, 'The Island of Formosa, Past and Present,'
646 pp., App. I.-IV., and Map. (1903.)

Appendix II. of this work contains a list of the land-birds of Formosa, prepared by Mr. J. D. D. La Touche, but, as the author never had an opportunity of correcting the proofs and the list contains many printer's errors, we have refrained from referring to it in our synonymy.

The names of all the species of birds of which specimens were procured by Mr. Goodfellow are marked with an asterisk (*). Those obtained by Swinhoe and other Collectors, and of which specimens are to be found in the British Museum or Liverpool Museum (Tristram Collection), are marked with a dagger (†). Some few species, which bear no mark, are included on the authority of Swinhoe, but of these no specimens have been examined, and possibly none were collected by him.

The following is a list of the localities visited by Mr. Goodfellow during his three-months' trip to Mount Morrison and the neighbouring peaks :—

Tainan (= Taiwanfu).

Daksui, on the railway, 45 miles north of Tainan.

Rinkiho (= Lim-ki-po), east of Daksui.

Ghi-ou-rog. Last Chinese village, 22 miles from Rinkiho.

Nama-ka-bang. First savage village : alt. 2500 ft.

Tompo. Second savage village.

Racu Racu. Highest inhabited village near Mount Morrison :
alt. 7000 ft.

Mount Morrison. Camp at 9000 ft. (whence Mr. Goodfellow
ascended to the summit, given as 13,880 ft.).

Mount Ho Ho. Two days' journey west of Mount Morrison.

Mount Kiu-Kong-Chin. A neighbouring peak.

[W. R. O.-G.]

CORVIDÆ.

1. †CORVUS MACRORHYNCHUS Wagl.

Corvus sinensis Gould ; Swinh. Ibis, 1863, p. 383.

Corvus colonorum Swinh. Ibis, 1864, p. 427.

Corvus macrorhynchus La Touche, Ibis, 1898, p. 370.

This Crow is resident in North Formosa, but uncommon. It was once observed by Swinhoe on the plains of South Formosa.

2. †PICA PICA (L.).

Pica media Blyth; Swinh. Ibis, 1863, p. 383; id. P. Z. S. 1871, p. 382.

Pica caudata Keys. u. Blas.; La Touche, Ibis, 1895, p. 335.

The Magpie is resident on the plains of the south-west, but is almost unknown in the north of Formosa.

3. *UROCISSA CERULEA Gould.

Urocissa cerulea Gould, P. Z. S. 1862, p. 282; Swinh. Ibis, 1863, p. 384; Gould, B. Asia, v. pl. 46 (1864); Sharpe, Cat. Birds B. M. iii. p. 74 (1877); La Touche, Ibis, 1898, p. 370.

a. ♀. Racu Racu Mts., 6000 ft., Jan. 1906.

b, c. ♂ ♀. Ho Ho Mt., 5000 ft., March 1906.

Iris yellow; bill and feet coral-red.

The measurements of these specimens, which are all adult shew considerable variation:—

♂. Wing 8·2; tail 15·3 inches.

♀. „ 7·9; „ 16·6 „

♀. „ 7·4; „ 14·4 „

This Blue Magpie is peculiar to Formosa, where it is resident in the mountains of the interior.

4. *DENDROCITTA FORMOSÆ Swinh.

Dendrocitta sinensis var. *formosæ* Swinh. Ibis, 1863, p. 387.

Dendrocitta formosæ Swinh. P. Z. S. 1871, p. 382; La Touche, Ibis, 1895, pp. 320, 321–323, 336; 1898, p. 370.

a–c. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

f. ♀. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris dark brown; bill and feet black.

This Tree-Pie is peculiar to the island and resident in the wooded mountains throughout the interior.

Swinhoe originally described this bird as a variety of *D. sinensis* Lath., and stated that the differences were too trifling to warrant its specific separation. It is, however,

easily recognised by having the basal half of the middle tail-feathers grey and the belly white.

5. **GARRULUS TAIVANUS* Gould.

Garrulus taiwanus Gould, P. Z. S. 1862, p. 282; Swinh. Ibis, 1863, p. 386; Gould, B. Asia, v. pl. 58 (1864).

Garrulus insularis Swinh. P. Z. S. 1863, p. 304.

a. ♂. Mt. Morrison, 8000 ft., Jan. 1906.

b, c. ♀. Racu Racu Mts., 7000 ft., Jan., Feb. 1906.

Iris brown; bill pale slate-coloured at the base, shading into black at the tip; feet yellowish flesh-coloured.

The Formosan Jay is peculiar to the island, where it is resident in the mountains of the interior.

STURNIDÆ.

6. †*ACRIDOTHERES CRISTATELLUS* (L.).

Acridotheres cristatellus Swinh. Ibis, 1863, p. 382; Sharpe, Cat. Birds B. M. xiii. p. 92 (1890); La Touche, Ibis, 1895, p. 335; 1898, p. 369.

The Crested Myna is resident on the plains, but is very rare in North Formosa.

7. †*SPODIOPSAR CINERACEUS* (Temm.).

Sturnus cineraceus Swinh. Ibis, 1863, p. 382.

Poliopsar cineraceus Sharpe, Cat. Birds B. M. xiii. p. 41 (1890).

Spodiopsar cineraceus La Touche, Ibis, 1898, p. 369.

The Grey Starling winters on the plains.

8. †*STURNIA SINENSIS* (Gmel.).

Heterornis sinensis Swinh. Ibis, 1863, p. 382.

Temenuchus sinensis Swinh. Ibis, 1866, p. 394.

Sturnia sinensis Sharpe, Cat. Birds B. M. xiii. p. 68 (1890); La Touche, Ibis, 1895, p. 335.

Mr. La Touche shot the Chinese Myna on the plains of S.W. Formosa in mid-November. Swinhoe states ('Ibis,' 1866, p. 394) that it winters on the island. It is probably a resident species in the south,

DICRURIDÆ.

9. *CHAPTIA BRAUNIANA Swinh.

Chaptia brauniana Swinh. Ibis, 1863, p. 269.

a, b. ♂ ♀. Racu Racu Mts., 6000 ft., Jan. 1906.

c. ♀. Ho Ho Mt., 5000 ft., March 1906.

Iris dark brownish red; bill and feet black.

The Bronzed Drongo is resident in the mountains of the interior. It appears to be merely a slightly larger race of the Himalayan *C. anea* (Vieill.), with which it should probably be united.

10. †BUCHANGA ATRA (Herm.).

Dicrurus macrocercus Vieill.; Swinh. Ibis, 1863, p. 266.

Dicrurus cathæcus Swinh. P. Z. S. 1871, p. 377.

Buchanga atra Sharpe, Cat. Birds B. M. iii. p. 246 (1877): La Touche, Ibis, 1895, pp. 306, 334; 1898, p. 366.

The Black Drongo is resident throughout the lower hills and plains of Formosa.

ORIOIDÆ.

11. †ORIOLOUS INDICUS Jerd.

Oriolus chinensis; Swinh. (nec L.) Ibis, 1863, p. 291.

Oriolus diffusus Sharpe, Cat. Birds B. M. iii. p. 197 (1877); La Touche, Ibis, 1895, pp. 324, 328, 333; 1898, p. 366.

This Oriole is resident on the plains and lower hills of South Formosa, and visits the north of the island during the summer.

12. *ORIOLOUS ARDENS (Swinh.).

Psaropholus ardens Swinh. Ibis, 1862, p. 363, pl. xiii.; 1863, p. 293; 1866, p. 398; Gould, B. Asia, ii. pl. 75 (1871).

a-c. ♂. Ho Ho Mt., 5000 ft., Feb., March 1906.

d-g. ♂ ♀. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris cream-coloured; bill pale grey; feet pale bluish grey.

This beautiful crimson Oriole is peculiar to Formosa, and is met with in the mountains throughout the island.

PLOCEIDÆ.

13. **UROLONCHA ACUTICAUDA* (Hodgs.).

Munia acuticauda Swinh. Ibis, 1863, p. 379; id. P. Z. S. 1871, p. 385; La Touche, Ibis, 1895, p. 335; 1898, p. 369.

Uroloncha acuticauda Sharpe, Cat. Birds B. M. xiii. p. 356 (1890).

Uroloncha squamicollis Sharpe, Cat. Birds B. M. xiii. p. 359 (1890) (part.).

a. ♀. Racu Racu Mts., 6000 ft., Feb. 1906.

This small *Munia* is resident all over the lower hills and plains of Formosa.

Dr. Sharpe has separated specimens of this Weaver-Finch from China, Formosa, and Hainan under the name of *U. squamicollis*, but it appears to us that the Formosan and Hainan birds differ from the light rufous-chested form met with in China and should rather be placed with *U. acuticauda* (Hodgs.), typical specimens of which some of the Formosan birds closely resemble. It must, however, be remarked that the majority of our Formosan examples have the chest-feathers rufous-brown with pale edges, but these parts are much darker than in Chinese specimens. These birds are, moreover, quite similar to specimens of so-called *U. acuticauda* from Tenasserim and Siam, which seem to belong to a form intermediate between *U. acuticauda* and *U. squamicollis*. The subject, however, requires more time and attention than we can at present bestow on it.

14. †*MUNIA TOPELA* Swinh.

Munia topela Swinh. Ibis, 1863, p. 380; Sharpe, Cat. Birds B. M. xiii. p. 351 (1890); La Touche, Ibis, 1895, p. 335; 1898, p. 369.

Swinhoe's *Munia* is resident all over the lower hills and plains of Formosa.

15. †*MUNIA FORMOSANA* Swinhoe.

Munia formosana Swinh. Ibis, 1865, p. 356; Sharpe, Cat. Birds B. M. xiii. p. 338 (1890); La Touche, Ibis, 1895, p. 335.

The Formosan *Munia* has been obtained on the lower

hills of South Formosa, and was observed by Mr. La Touche in the neighbourhood of Banksa. It was believed to be peculiar to Formosa, but according to Messrs. Macgregor and Worcester it has been taken in Luzon, Philippine Islands [*cf.* Hand-list of the Birds of the Philippine Isl. p. 105 (1906)].

FRINGILLIDÆ.

16. *EOPHONA MIGRATORIA* Hartert.

Coccothraustes melanurus La Touche (nec Gmel.), Ibis, 1898, p. 368.

Eophona melanura migratoria Hartert, Vög. Pal. Faun. pt. i. p. 59 (1903).

A straggler of this Grosbeak was seen by Mr. La Touche at Tamsui, N. Formosa, on the 16th of April.

17. *CHLORIS SINICA* (Linn.).

Fringilla sinica Swinh. Ibis, 1863, p. 378.

Chloris sinica Sharpe, Cat. Birds B. M. xii. p. 26 (1888).

According to Swinhoe this Greenfinch is "a resident species, somewhat rare" in Formosa. There is no example in the British Museum from that locality, and Swinhoe's specimens, if he ever preserved any, are not included in either the Seebohm or Tristram Collections.

18. †*PASSER MONTANUS* (Linn.).

Passer montanus Swinh. Ibis, 1863, p. 378; La Touche, Ibis, 1895, p. 335; 1898, p. 368.

The Tree-Sparrow occurs on the lowlands, generally in inhabited districts.

19. †*PASSER RUTILANS* Temm.

Passer russatus Temm. & Schl.; Swinh. Ibis, 1863, p. 378.

Passer rutilans Swinh. P. Z. S. 1871, p. 386; Sharpe, Cat. Birds B. M. xii. p. 329 (1888).

According to Swinhoe this Sparrow inhabits the hilly parts of Formosa.

20. *CARPODACUS INCERTUS Grant.

Carpodacus incertus Grant, Bull. B. O. C. xvi. p. 122 (1906).

a. ♀. Mt. Morrison, 8000 ft., Jan. 1906. (*Type of the species.*)

b, c. ♀ et ♂ imm. Mt. Morrison, 8000 ft., Jan. 1906.

Adult female. Closely allied to the female of *C. edwardsi* Verr., from N. India and Western China, but differs in having a smaller bill; no pale spotted feathers on the forehead; no very well-marked pale buff superciliary stripe; darker brownish buff under-parts, similarly coloured under tail-coverts, and both with dark shaft-stripes. Total length ca. 5·7 inches, wing 3·0, tail 2·55, tarsus 0·9.

The only male of this species procured by Mr. Goodfellow is an immature bird in brown plumage similar to that of the female.

The fully adult male is probably rose-coloured as in *C. edwardsi*; it is to be hoped that we shall soon receive adult examples.

21. †EMBERIZA SPODOCEPHALA Pall.

Emberiza spodocephala Swinh. Ibis, 1863, p. 377; La Touche, op. cit. 1895, p. 335; 1898, p. 368.

The Black-faced Bunting is a very common winter visitant throughout Formosa.

22. †EMBERIZA SULPHURATA Temm. & Schleg.

Emberiza sulphurata Swinh. Ibis, 1863, p. 378; Sharpe, Cat. Birds B. M. xii. p. 519 (1888).

Siebold's Bunting is a winter visitant, but, according to Swinhoe, it is by no means so common as the last.

23. EMBERIZA AUREOLA Pall.

Emberiza aureola Swinh. Ibis, 1863, p. 378.

Swinhoe reports the Yellow-breasted Bunting as a winter visitant to Formosa, but not common. He does not appear to have collected any specimens.

24. EMBERIZA FUCATA Pall.

Emberiza fucata Swinh. Ibis, 1863, p. 378.

Swinhoe records the Grey-headed Bunting as a winter

visitant to Formosa, but not common. There are no Formosan specimens in the British Museum.

25. *EMBERIZA CIOIDES* Brandt.

Emberiza cioides Swinh. Ibis, 1863, p. 378.

Swinhoe says that the Siberian Meadow-Bunting is a winter visitant to Formosa, but not common. The form referred to is probably the so-called *E. castaneiceps* Moore, but the British Museum contains no examples from Formosa. We cannot see any reasonable grounds for separating *E. castaneiceps* from typical *E. cioides*, as the characters given are not constant [*cf.* Hartert, Vög. Pal. Faun. pt. ii. p. 186 (1904)].

ALAUDIDÆ.

26. †*ALAUDA SALA* Swinh.

Alda cœlix Swinh. Ibis, 1863, p. 377 (part.).

Alda sala, Swinh. op. cit. 1870, p. 354; La Touche, op. cit. 1898, p. 368.

This Lark is resident in North Formosa.

27. †*ALAUDA WATTERSI* Swinh.

Alda cœlix Swinh. Ibis, 1863, p. 377 (part.).

Alda wattersi Swinh. P. Z. S. 1871, p. 389; La Touche, Ibis, 1895, pp. 318, 327, 335.

This form of Lark is resident in South Formosa and in the Pescadores.

MOTACILLIDÆ.

28. **MOTACILLA LEUCOPSIS* Gould.

Motacilla luzoniensis; Swinh. (nec Scop.) Ibis, 1863, p. 308.

Motacilla leucopsis Oates, Faun. Brit. Ind., Birds, ii. p. 288 (1890); La Touche, Ibis, 1895, p. 332; 1898, p. 364.

a-c. ♂ ♀. Racu Racu torrents, 6000 ft., Feb. 1906.

Iris dark brown; bill and feet black.

The White-faced Wagtail is resident throughout Formosa.

Three adult examples in incipient summer-plumage have the entire chest of a very deep black colour.

29. †*MOTACILLA OCULARIS* Swinh.

Motacilla ocularis Swinh. Ibis, 1863, p. 309; Tristram, Cat. Coll. B. p. 170 (1889); La Touche, Ibis, 1898, p. 364.

The Streak-eyed Wagtail is a winter visitant to North Formosa. Swinhoe found it breeding on the island.

30. †*MOTACILLA LUGENS* Pall.

Motacilla lugubris Swinh. Ibis, 1863, p. 308.

Motacilla lugens? La Touche, op. cit. 1895, p. 332.

Swinhoe states that he procured an example of this Wagtail in South Formosa in March after a heavy gale. Specimens were subsequently collected by Holst in March and June, 1894. The bird obtained in June is a young female, so probably the species occasionally breeds in Formosa.

31. †*MOTACILLA MELANOPE* Pall.

Motacilla boarula: Swinh. (nec Linn.) Ibis, 1863, p. 309.

Calobates melanope Swinh. P. Z. S. 1871, p. 364.

Motacilla melanope La Touche, Ibis, 1895, p. 332; 1898, p. 364.

According to Swinhoe, the Grey Wagtail is a common resident in Formosa.

32. †*MOTACILLA TAIVANA* Swinh.

Budytes flava L. var. *rayi* Swinh. Ibis, 1863, p. 309.

Budytes taiwanus Swinh. op. cit. 1866, p. 138; 1870, p. 346.

Motacilla taiwana Sharpe, Cat. Birds B. M. x. p. 514 (1885); La Touche, Ibis, 1895, p. 332; 1898, p. 364.

The Eastern Yellow Wagtail is a constant resident in Formosa, resorting chiefly to the neighbourhood of the mountain-streams for the purpose of nidification.

33. **ANTHUS MACULATUS* Hodgs.

Anthus agilis Swinh. (nec Sykes) Ibis, 1863, p. 310.

Anthus maculatus La Touche, op. cit. 1898, p. 364.

a. ♀. Racu Racu Mts., 6000 ft., Jan. 1906.

b. ♀. Ho Ho Mt., 5000 ft., Mar. 1906.

The Spotted Tree-Pipit is a winter visitant to Formosa.



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REGULUS GOODFELLOWI, ♂ & ♀.

34. †ANTHUS CERVINUS (Pall.).

Anthus cervinus Swinh. Ibis, 1863, p. 311; La Touche, op. cit. 1895, p. 333; 1898, p. 364.

The Red-throated Pipit is a common winter visitant to Formosa, remaining there till the end of April or beginning of May.

35. †ANTHUS RICHARDI Vieill.

Anthus richardi Swinh. Ibis, 1863, p. 311; La Touche, op. cit. 1895, p. 333; 1898, p. 365.

Richard's Pipit is a winter visitant to North Formosa and probably also to the south of the island. Swinhoe considered it a very rare straggler. Four examples were collected by Mr. La Touche at Hobé, N. Formosa, and one of these is now in the British Museum.

ZOSTEROPIDÆ.

36. †ZOSTEROPS SIMPLEX Swinh.

Zosterops simplex Swinh. Ibis, 1863, p. 294; La Touche, op. cit. 1895, p. 314; 1898, p. 367.

This White-eye is resident throughout the lower hill-ranges and plains.

SITTIDÆ.

37. *SITTA SINENSIS Verr.

Sitta europæa sinensis Hellmayr, Das Tierreich, Sittidæ p. 179 (1903).

a. ♀. Racu Racu Mts., 7000 ft., Jan. 1906.

The single example of this Nuthatch obtained by Mr. Goodfellow agrees with typical Chinese specimens. The species had not been previously recorded from Formosa.

REGULIDÆ.

38. *REGULUS GOODFELLOWI Grant. (Plate III.)

Regulus goodfellowi Grant, Bull. B. O. C. xvi. p. 122 (1906).

a, b. ♂ ♀. Mt. Morrison, 9000-10,000 ft., Jan. 1906. (Types of the species.)

Adult male. Most nearly allied to the male of *R. igni-*

capillus, from which, however, it differs greatly in the more brilliant fiery orange-red of the crown, the more distinct black-and-white markings on the sides of the head, the canary-yellow lower back and rump, and the somewhat paler yellow sides of the breast, flanks, and under tail-coverts.

Total length ca. 3·5 inches ; wing 2·1 ; tail 1·4 ; tarsus 0·8.

Adult female. Similar to the male, but with the middle of the crown of the same canary-yellow colour as the lower back.

Total length ca. 3·5 inches ; wing 2·05 ; tail 1·48 ; tarsus 0·8.

This exquisite little Fire-crest is well represented in the accompanying plate by Mr. G. E. Lodge. It is a much finer species than any *Regulus* previously known.

PARIDÆ.

39. **MACHLOLOPHUS HOLSTI* Seeb.

Parus holsti Seeb. Bull. B. O. C. vol. iv. p. vii (1894) ; id. Ibis, 1895, pp. 146, 211, pl. vi.

a-c. ♂ ♀. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

As will be remembered, a single male example of this remarkably fine Titmouse was procured by the late A. P. Holst on an outlying spur of Mount Morrison. In his description of the type, Seebohm omitted to mention the *black patch on the middle of the belly*, which it now appears is one of the characteristics of the male.

The female differs from the male in having a shorter crest, washed with dark olive on the sides ; the upper parts dull greenish olive-grey (instead of glossy greenish black *), the blue tinge on the wings and tail less bright, and in lacking the black patch on the belly. Iris dark reddish brown ; bill black ; feet slate-coloured.

Male. Total length ca. 5·0 inches ; wing 3·0-3·05 ; tail 2·1-2·2 ; tarsus 0·8-0·85.

Female. Total length ca. 4·8 inches ; wing 2·8 ; tail 2·0 ; tarsus 0·78.

* Described by Seebohm as "greenish metallic blue"!

40. *PARUS INSUPERATUS Swinh.

Parus insuperatus Swinh. Ibis, 1866, p. 308; La Touche, op. cit. 1895, pp. 322, 332.

Parus monticolus insuperatus Hellmayr, Das Tierreich, Paridæ, p. 99 (1903).

a-e. ♂ ♀. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

Iris dark brown; bill black; feet bluish grey.

This insular form appears to differ slightly but constantly from typical *P. monticola* in its rather smaller size, in having the grey of the rump slightly paler and extending rather further up the back, the outer webs of the quills and tail-feathers of a rather brighter blue, and the white on the inner secondaries confined to the tip and not extending along the margin of the outer web; the two last-named characters are sometimes found in continental birds from China &c.

	Males.	Females.
<i>P. insuperatus</i>	Wing 2·55-2·65	2·50-2·6
<i>P. monticola</i>	„ 2·65-2·8	2·55-2·8

41. †PARUS CASTANEIVENTRIS Gould.

Parus castaneiventris Gould, P. Z. S. 1862, p. 280.

Parus castaneiventris Swinh. Ibis, 1863, p. 295.

Parus varius castaneiventris Hellmayr, Das Tierreich, Paridæ, p. 84 (1903).

Swinhoe states that this handsome Titmouse is entirely restricted to the interior mountain-chains of Formosa, where it is said to be by no means common.

42. *ÆGITHALUS CONCINNUS (Gould).

Psaltria concinna Gould, B. Asia, ii. pl. 65 (1855) [China].

Ægithalos concinnus Hellmayr, Das Tierreich, Paridæ, p. 122 (1903).

a-d. ♂ ♀. Racu Racu Mts., 6000 ft., Jan. 1906.

Iris cream-coloured.

The examples of this elegant Long-tailed Titmouse collected by Mr. Goodfellow differ in nowise from specimens from China and Hainan. It is the first time that this species has been recorded from Formosa.

LANIIDÆ.

43. †LANIUS SCHACH Linn.

Lanius schach var. *formosæ* Swinh. Ibis, 1863, p. 270.

Lanius schach Swinh. P. Z. S. 1871, p. 375; La Touche, Ibis, 1895, p. 334; 1898, p. 366.

The Chestnut-backed Shrike is resident on the lower hills and plains of Formosa.

44. †LANIUS LUCIONENSIS Linn.

Lanius lucionensis Swinh. Ibis, 1863, p. 272; 1866, p. 394; La Touche, op. cit. 1895, p. 334; 1898, p. 366.

The Luzon Shrike passes on migration in spring and autumn, and La Touche has seen it once or twice during the winter in North Formosa. Swinhoe observed this species late in December, and has stated ('Ibis,' 1866, p. 394) that it passes the winter on the island.

AMPELIDÆ.

45. AMPELIS JAPONICUS (Siebold).

Ampeelis phœnicoptera (Temm.) ; Swinh. Ibis, 1864, p. 427; 1866, p. 307.

A female of the Japanese Waxwing shot at Tamsui on the 17th of April is recorded by Swinhoe, but we cannot trace what became of the specimen. As in Foh-kien, it is, no doubt, a scarce winter straggler.

SYLVIIDÆ.

46. ACROCEPHALUS ORIENTALIS (Temm. & Schl.).

Calamoherpe orientalis Swinh. Ibis, 1863, p. 305.

According to Swinhoe, the eastern form of the Great Reed-Warbler abounds in suitable localities in Formosa in summer. There are, however, no examples from that island in the British Museum.

47. LUSCINIOLA FUSCATA (Blyth).

Phyllopneuste fuscata Swinh. Ibis, 1863, p. 306.

According to Swinhoe, Blyth's Grass-Warbler winters in Formosa in small numbers, but we have not seen examples from that island.

48. †*CISTICOLA VOLITANS* (Swinh.).

Calamanthella volitans Swinh. J. As. Soc., Shanghai, no. ii. p. 226 (1859).

Cisticola volitans Swinh. Ibis, 1863, p. 304; Oates, Faun. Brit. Ind. i. p. 273 (1889).

Cisticola exilis (Vig. & Horsf.); La Touche, Ibis, 1898, p. 361.

This Grass-Warbler is resident in North Formosa.

49. †*CISTICOLA CISTICOLA* (Temm.).

Cisticola schœnicola Bonap.; Swinh. Ibis, 1863, p. 303.

Cisticola cursitans Frankl.; La Touche, op. cit. 1898, p. 361.

The Rufous Grass-Warbler is resident in North Formosa and probably throughout the island.

The eggs mentioned by Swinhoe as those of this species are evidently the eggs of a *Zosterops*.

50. †*PHYLLOSCOPUS BOREALIS* (Blas.).

Phyllopneuste silvicultrix Swinh. Ibis, 1863, p. 307.

Phyllopneuste borealis Swinh. P. Z. S. 1871, p. 356.

Phylloscopus borealis La Touche, Ibis, 1898, p. 363.

The Arctic Willow-Warbler was observed and shot by Swinhoe at Tainan (Taiwanfoo), South-west Formosa, in October. La Touche met with a flock at Tamsui in January.

51. *PHYLLOSCOPUS CORONATUS* (Temm.).

Phyllopneuste coronata Swinh. Ibis, 1863, p. 307.

According to Swinhoe, a few examples of the Crowned Willow-Warbler visit Formosa in winter, but we have not seen a specimen from this locality.

52. †*PHYLLOSCOPUS SUPERCILIOSUS* (Gmel.).

Reguloides superciliosus Swinh. Ibis, 1863, p. 307.

The Yellow-browed Warbler is not uncommon in winter according to Swinhoe. La Touche believes that he heard its note in winter and spring at Tamsui.

53. †*HORORNIS ROBUSTIPES* (Swinh.).

Horeites robustipes Swinh. Ibis, 1866, p. 398; id. P. Z. S. 1871, p. 351.

The types of this species of Bush-Warbler were procured by Swinhoe from the interior of S. Formosa, but in his notes

on these birds he does not state the locality where they were shot.

Seebohm [*cf.* Cat. Birds B. M. v. p. 136 (1881)] has united this bird with *H. fortipes* (Hodgs.), but it appears to us to be quite distinct from that species, and perhaps to be more nearly allied to *H. sinensis* (La Touche). The Formosan form differs, however, from *both* these in its smaller size, the wing- and tail-measurements being considerably less, and in having the sides of the body and flanks rusty-olive. It resembles *H. fortipes* in having a longer, stouter bill, and approaches *H. sinensis* in having the throat and breast whiter.

The types measure respectively : wing 1·95 inch, tail 1·8 ; wing 1·9, tail (worn) 1·5.

54. †HORORNIS CANTURIENS (Swinh.).

Calamoherpe canturiens and *C. minuta* Swinhoc. Ibis, 1863, p. 306.

Cettia canturiens and *C. cantans minuta* La Touche, op. cit. 1895, p. 332.

Cettia canturiens and *C. minuta* La Touche, op. cit. 1898, p. 363.

The Chinese Bush-Warbler is resident according to Swinhoc, and was observed by La Touche in both North and South Formosa from November to the end of April.

As remarked by La Touche (*cf.* 'Ibis,' 1906, pp. 447-450), *Cettia canturiens* is the male and *C. minuta* the female of one and the same species.

55. †UROSPHENA SQUAMICEPS (Swinh.).

Tribura squamiceps Swinh. P. Z. S. 1871, p. 355.

Horornis squamiceps La Touche, Ibis, 1895, p. 331 ; 1898, p. 363.

Swinhoe's Bush-Warbler is found in winter on the hills and mountains of North and South Formosa.

56. *SUYA CRINIGERA Hodgs.

Suya striata Swinh. Ibis, 1863, p. 301.

Suya crinigera La Touche, op. cit. 1898, p. 359.

a. ♂. Ho Ho Mt., 5000 ft., March 1906.

Iris reddish golden ; bill black, whitish at the base of the lower mandible ; feet cinnamon-coloured.

The Brown Hill-Warbler is resident in the hills of North and Central Formosa, and appears to be indistinguishable from Indian and Chinese examples.

57. †PRINIA EXTENSICAUDA (Swinh.).

Drymæca extensicauda and *D. flavirostris* Swinh. Ibis, 1863, pp. 299, 300.

Prinia extensicauda Sharpe, Cat. Birds B. M. vii. p. 199 (1883).

Prinia inornata La Touche (nec Sykes), Ibis, 1895, p. 331; 1898, p. 360.

The Formosan Wren-Warbler is resident on the plains and lower hills.

58. †BURNESIA SONITANS (Swinh.).

Prinia sonitans Swinh. Ibis, 1863, p. 302; La Touche, op. cit. 1895, p. 331; 1898, p. 359.

Burnesia sonitans Sharpe, Cat. Birds B. M. vii. p. 205 (1883).

This Wren-Warbler is resident on the plains and lower hills.

TURDIDÆ.

59. †TURDUS FUSCATUS Pall.

Turdus fuscatus Pall.; Swinh. Ibis, 1863, p. 277.

Swinhoe found immature examples of the Dusky Ouzel common at Tamsui in spring.

60. TURDUS NAUMANNI Temm.

Turdus naumanni Swinh. Ibis, 1863, p. 277.

An immature female of the Red-tailed Ouzel was shot by Swinhoe at Tamsui on the 19th of February.

61. †TURDUS PALLIDUS Gmel.

Turdus pallidus Swinh. Ibis, 1863, p. 276.

Merula pallida La Touche, op. cit. 1895, p. 330; 1898, p. 356.

The Pale Ouzel winters in North Formosa and probably throughout the rest of the island.

62. †TURDUS CHRYSOLAUS Temm.

Turdus chrysolaus Swinh. Ibis, 1863, p. 276.

Merula chrysolaus Seebohm, Cat. Birds B. M. v. p. 275 (1881); La Touche, Ibis, 1898, p. 356.

The Brown Japanese Ouzel has been procured in North Formosa in early spring.

63. TURDUS OBSCURUS Gmel.

Turdus obscurus Swinh. Ibis, 1863, p. 277.

Merula obscura La Touche, op. cit. 1898, p. 356.

The Dark Ouzel occurs in North Formosa in spring.

64. †TURDUS ALBICEPS Swinh.

Turdus albiceps Swinh. Ibis, 1864, p. 363; 1866, pp. 135, 315, pl. v.

Merula albiceps Seebohm, Cat. Birds B. M. v. p. 259 (1881); id. Ibis, 1895, p. 213; La Touche, op. cit. 1895, pp. 325, 329, 330.

The Formosan Ouzel is peculiar to the island.

65. *OREOCINCLA VARIA (Pall.).

Oreocincla hancii Swinh. Ibis, 1863, p. 275.

Oreocincla varia Swinh. P. Z. S. 1871, p. 367.

Geocichla varia La Touche, Ibis, 1898, p. 357; Seebohm, Monogr. Turdidæ, i. p. 1, pl. i. (1898).

a. ♀. Mt. Morrison, 8000 ft., Jan. 1906.

b, c. ♀. Racu Racu Mts., 7000 ft., Feb. 1906.

d. ♀. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris brown; bill light brown, yellowish at the base; feet flesh-coloured.

White's Thrush winters in Formosa.

66. *MONTICOLA MANILLA (Bodd.).

Petrocincla manilensis Swinh. Ibis, 1863, p. 274.

Monticola solitarius P. L. S. Müller (nec Linn.); La Touche, Ibis, 1895, p. 331; 1898, p. 357.

a. ♂. Ho Ho Mt., 5000 ft., March 1906.

This Blue Rock-Thrush is resident in suitable localities throughout Formosa and the Pescadores.

67. *MICROCICHLA SCOULERI (Vigors).

Microcichla scouleri Sharpe, Cat. Birds B. M. vii. p. 322 (1883).

a, b. ♂ ♀. Mt. Morrison, 9000 ft., Jan. 1906.

c. ♂. Sho-kur-ran torrent, Mt. Morrison, 9000 ft., Jan. 1906.

d-g. ♂ ♀. Racu Racu torrent, Feb. 1906.

Iris very dark brown; bill black; legs and feet pure white.

So far as we can ascertain, the Little Forktail has not previously been recorded from Formosa. Formosan examples appear to have the culmen slightly longer and rather more curved upwards than in typical examples from India and China, but in other respects the birds seem to be perfectly similar.

68. RUTICILLA AUROREA (Pall.).

Ruticilla aurorea Swinh. Ibis, 1863, p. 299; La Touche, op. cit. 1895, p. 331; 1898, p. 363.

The Daurian Redstart frequents the lower hills and plains in winter.

69. CALLIOPE CAMTSCHATKENSIS (Gm.).

Calliope kamschatkensis (Gmel.); Swinh. Ibis, 1863, p. 298.

Calliope kamschatkensis La Touche, op. cit. 1895, p. 331.

The Ruby-throat is a winter visitor to Formosa. Holst procured a large series between the months of November and January.

70. *IANTHIA CYANURA (Pall.).

Ianthia cyanura Swinh. Ibis, 1863, p. 298.

Tarsiger cyanurus La Touche, op. cit. 1898, p. 367.

a, b. ♂. Mt. Morrison, 8000 ft., Jan. 1906.

Both the males of this Bush-Robin obtained are in a plumage resembling that of the adult female.

71. *IANTHIA JOHNSTONIÆ. (Plate IV.)

Ianthia johnstoniæ Grant, Bull. B. O. C. xvi. p. 118 (1906).

a. ♂. Racu Racu Mts., 8000 ft., Feb. 1906. } (Types of
b. ♀. Mt. Morrison, 8000 ft., Jan. 1906. } the species.)

Adult male. Entire head and throat black, shading into blackish slate-colour on the hind-neck; a lengthened white eyebrow-stripe commencing above the lores and continued backwards over the ear-coverts along the sides of the occiput; a band of feathers bordering the throat, and the hind-neck, as well as the scapulars, bright chestnut-maroon, shading into orange towards the base of the feathers; rest of the back black, deep slate-grey in the middle, rump-feathers tipped with orange-buff; rest of the under parts dull brownish orange; middle of the belly and under tail-coverts white; wings brownish black edged with greyish olive on the outer webs of the quills; tail black. Iris dark brown.

Total length ca. 5·1 inches; wing 2·9; tail (worn) 2·3; tarsus 1·1.

Adult female. General colour above dark olive, with the long eyebrow-stripe less strongly marked than in the male, especially in front of the eye; under parts dull yellowish olive, much lighter than the upper parts, and palest on the throat, middle of the belly, and under tail-coverts; quills and tail brownish black; outer webs margined with brownish olive.

Total length ca. 5·1 inches; wing 2·9; tail 2·45; tarsus 1·15.

This remarkable Bush-Robin is one of Mr. Goodfellow's most important discoveries in the highlands of Formosa. As may be seen from the figure (Pl. IV.), the style of coloration in the male is so absolutely different from that of any other member of the genus that we were at first inclined to think that the bird would prove to be generically distinct from *Ianthia*, but in all its structural characters it agrees well with other species of that genus.

72. †NOTODELA MONTIUM (Swinh.).

Myiomela montium Swinh. Ibis, 1864, p. 362; 1866, p. 392.

Notodela montium Swinh. P. Z. S. 1871, p. 359; Sharpe, Cat. Birds B. M. vii. p. 24 (1883); La Touche, Ibis, 1895, pp. 321, 323, 331.

This Blue Robin is peculiar to Formosa, where it is resident in the forest-districts of the south.



G. E. Lodge

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IANTHIA JOHNSTONIÆ, ♂ & ♀.

73. PRATINCOLA MAURA (Pall.).

Pratincola indica (Blyth) ; Swinh. Ibis, 1863, p. 298.

According to Swinhoe, the Indian Stonechat is met with on the plains of Formosa in winter, but we have not examined specimens from the island. The British Museum contains an example collected by Swinhoe in Hainan.

CINCLIDÆ.

74. †CINCLUS MARILA (Swinh.).

Hydrobata marila Swinh. J. As. Soc., Shanghai, no. ii. p. 227 (1859) ; id. Ibis, 1860, pp. 187, 360.

Cinclus pallasii Swinh. (nec Temm.) op. cit. 1863, p. 272.

Cinclus marila La Touche, op. cit. 1898, p. 362.

This Dipper is peculiar to Formosa. Swinhoe and Mr. La Touche procured it in the north of the island, and it was seen by Mr. Goodfellow on Mount Morrison.

In the opinion of Dr. Bianchi, this insular form must be regarded as distinct from *C. pallasii*.

The Formosan Dipper is closely allied to *C. soulei* Oustal., which inhabits South China from the Yangtse Valley southwards.

The young of *C. marila* have the light cross-bars on the under parts whitish, and in this respect approach typical *C. pallasii* Temm. ; in *C. soulei* these parts are invariably barred with pale rufous and buff ; moreover, the bill in *C. soulei* is perhaps somewhat stronger and coarser towards the tip than is the case in the Formosan birds.

TROGLODYTIDÆ.

75. *ANORTHURA FUMIGATA (Temm.).

Anorthura fumigata Sharpe, Cat. Birds B. M. vi. p. 276, pl. xvi. fig. 1 (1881).

a-c. ♂ ♀. Mt. Morrison, 9000 ft., Jan. 1906.

Iris dark brown ; bill dark brown, yellowish at the base ; feet dark brown.

We have referred the three Wrens collected by Mr. Goodfellow on the summit of Mt. Morrison to the present species.

They have the barring on the lower back and rump rather less distinct than in the majority of Japanese specimens; and the throat and upper breast almost uniform pale rufous-brown, only one of the three Formosan specimens shewing any trace of dusky bars. On the other hand, certain Japanese examples approach the Formosan birds so closely that I am unable to separate them. It is the first time that a Wren has been recorded from the island.

TIMELIIDÆ.

76. *TROCHALOPTERUM TAIWANUM (Swinh.).

Garrulax taewanus, Swinh. J. As. Soc., Shanghai, no. ii. p. 228 (1859).

Garrulax taivanus Swinh. Ibis, 1863, p. 279.

Malacocercus taivanus Swinh. op. cit. 1865, p. 546.

Leucodiotrum taivanum Swinh. P. Z. S. 1871, p. 371.

Trochalopteron taivanum Sharpe, Cat. Birds B. M. vii. p. 377 (1883); La Touche, Ibis, 1895, p. 331; 1898, p. 357.

a-c. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

d. ♀. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris dark grey; bill brownish yellow; feet dull yellow.

This Laughing-Thrush is peculiar to Formosa, where it is resident on the plains and lower hills up to an elevation of about 5000 feet.

77. *TROCHALOPTERUM MORRISONIANUM Grant.

Trochalopteron morrisonianum Grant, Bull. B. O. C. xvi. p. 120 (1906).

a, b. ♂ ♀. Mt. Morrison, 9000 ft., Jan. 1906. (*Types of the species.*)

c-l. ♂ ♀. Mt. Morrison, 8000-9000 ft., Jan. 1906.

Adult male and female. Most nearly allied to *T. blythi* Verr., but differ chiefly in the following points:—The top of the head olive-grey, each feather with the shaft and a narrow marginal band black; a band of white feathers commencing above the lores, interrupted over the eye, and continuous along the sides of the occiput: feathers surround-

ing the eye and ear-coverts deep chestnut-brown; a white moustachial stripe, commencing with a light chestnut spot at the base of the lower mandible; the rest of the upper parts and the sides of the belly and thighs olive-grey; the longer feathers of the mantle, sides of the neck, and breast dull chestnut fringed with white; the middle of the belly, flanks, and under tail-coverts dark chestnut; the wings and tail very similar to those of *T. blythi*, but the outer margins of the primaries much yellower. Iris dark brown; bill light brown; feet reddish cinnamon (raw sienna).

♂. Total length ca. 11·0 inches; wing 4·3; tail 5·9; tarsus 1·75.

♀. Total length ca. 10·0 inches; wing 4·0; tail 5·0; tarsus 1·6.

The fine series of this handsome Laughing-Thrush collected on the higher slopes of Mount Morrison shews no variations in colour, except that some individuals have the whitish fringes to the feathers of the mantle and breast rather more strongly indicated than others.

78. **POMATORHINUS MUSICUS* Swinh.

Pomatorhinus musicus Swinh. J. As. Soc., Shanghai, no. ii. p. 228 (1859).

Pomatorhinus musicus Swinh. Ibis, 1863, p. 284, pl. vi.; Wardlaw Ramsay, op. cit. 1878, p. 139; Sharpe, Cat. Birds B. M. vii. p. 424 (1883); La Touche, Ibis, 1895, p. 330.

a-c. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

d-g. ♂ ♀. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris creamy yellow; upper mandible black, lower white; feet dark brown.

This Scimitar-Babbler is peculiar to Formosa where it is met with on the lower hills and plains.

79. **POMATORHINUS ERYTHROCNEMIS* Gould.

Pomatorhinus erythrocnemis Gould, P. Z. S. 1862, p. 281; id. B. Asia, iii. pl. 33 (1864); Swinh. Ibis, 1863, p. 286; Wardlaw Ramsay, op. cit. 1878, p. 144; Sharpe, Cat. Birds B. M. vii. p. 427 (1883); La Touche, Ibis, 1895, pp. 311, 312, 331.

a, b. ♀. Racu Racu Mts., 6000 ft., Jan. 1906.

c-g. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

h. ♂. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris light brown; upper mandible black, lower brownish; feet light reddish brown.

This species is also peculiar to Formosa, where it appears to be confined to the hills and mountains of the central part of the island.

80. †*GARRULAX RUFICEPS* Gould.

Garrulax ruficeps Gould, P. Z. S. 1862, p. 281; Swinh. Ibis, 1863, p. 282; Sharpe, Cat. Birds B. M. vii. p. 438 (1883).

The Formosan Red-capped Laughing-Thrush is peculiar to the central wooded mountains of the island.

81. **DRYONASTES PÆCILORHYNCHUS* (Gould).

Garrulax pæcilorhyncha Gould, P. Z. S. 1862, p. 281; Swinh. Ibis, 1863, p. 283; Gould, B. Asia, iii. pl. 51 (1864).

Dryonastes pæcilorhynchus Sharpe, Cat. Birds B. M. vii. p. 460 (1883).

a-c. ♂ ♀. Racu Racu Mts., 6000-7000 ft., Jan., Feb. 1906.

d-h. ♂ ♀. Ho Ho Mt., 5000 ft.; March 1906.

Iris dark brown; bare skin of the face indigo-blue; bill blackish at the base, tip yellow; feet pale bluish green.

The White-vented Laughing-Thrush is peculiar to the forest-clad ranges of the island.

The specimens collected by Mr. Goodfellow at elevations of from 5000-7000 feet differ from the type of *D. pæcilorhynchus*, and from other specimens in the British Museum collected by Swinhoe, in having the vent and under tail-coverts pure white instead of buff, and the upper parts rather more olivaceous and less rufous. It is possible that these differences may indicate a slightly different highland form, but on this point I am not quite satisfied, as the buff of the under-tail-coverts in Swinhoe's birds (in one of them these feathers are partly white) may be due to stain, and the different tint of the upper parts may be seasonal. To settle

this point it will be necessary to procure carefully prepared examples of *D. pæcilorhynchus* from North Formosa.

82. *ALCIPPE MORRISONIA Swinh.

Alcippe morrisonia Swinh. Ibis, 1863, p. 296; 1865, p. 107; La Touche, op. cit. 1895, pp. 314, 321, 332; 1898, p. 358.

Alcippe morrisoniana Sharpe, Cat. Birds B. M. vii. p. 621 (1883).

a-d. ♂ ♀. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

e. ♀. Ho Ho Mt., 4000 ft., March 1906.

The Mount Morrison Babbler is peculiar to Formosa and is distributed throughout the mountains and lower hills.

This species is also said to come from "China (Foh-kien)" [*cf.* Sharpe, Hand-l. B. iv. p. 44 (1903)]; but this is no doubt a mistake, as the bird found there is the closely allied *A. hueti* David, which differs in having browner sides and flanks.

83. *PROPARUS FORMOSANUS Grant.

Proparus formosanus Grant, Bull. B. O. C. xvi. p. 120 (1906).

a. ♂. Mt. Morrison, 9000 ft., Jan. 1906. (*Type of the species.*)

Adult male. Most nearly allied to *P. vinipectus* (Hodgs.), but easily distinguished by the absence of the white superciliary streak, which is represented by a pale greyish brown band extending along the sides of the occiput; ear-coverts pale vinous-brown; crown of the head earthy-brown like the mantle; throat and breast white, strongly streaked with brown; breast pale vinous; outer edges of the secondaries of a duller rufous-chestnut shade.

Total length ca. 4.5 inches; wing 2.1; tail 2.1; tarsus 0.9.

The discovery of this Tit-Babbler in Formosa is an extremely interesting fact, affording yet another instance of the close connection between the highland fauna of the Himalaya and that of Formosa.

84. *SCHÆNIPARUS BRUNNEUS (Gould).

Alcippe brunnea Gould, P. Z. S. 1862, p. 280; id. B. Asia, iii. pl. 66 (1864); Swinh. Ibis, 1863, p. 297; Sharpe, Cat.

Birds B. M. vii. p. 624 (1883) : La Touche, Ibis, 1895, pp. 311, 312, 332 ; 1898, p. 358.

Alcippe obscurior Grant, Bull. B. O. C. xvi. p. 121 (1906) ; xix. p. 14 (1906).

a. ♂. Racu Racu Mts., 6000 ft., }
Feb. 1906. } (*Types of Alcippe*
b. ♀. Ho Ho Mt., 5000 ft., Feb. } *obscurior Grant.*)
1906.

c. ♂. Racu Racu Mts., 7000 ft., Feb. 1906.

d, e. ♀. Ho Ho Mt., 5000 ft., March 1906.

Iris dark brown ; bill black ; feet olive-brown.

The Brown Tit-Babbler is peculiar to Formosa, where it inhabits the mountains of the interior, descending to the lower wooded foot-hills.

The British Museum contains a large series of *Schæniparus* from various parts of China presented by Messrs. Rickett and La Touche. These specimens had been identified by the donors as *Alcippe brunnea* Gould, and had been added to the National Collection under that name. On comparing Mr. Goodfellow's Formosan birds with this box of light-bellied specimens it was at once apparent that two species were represented ; but I unfortunately overlooked the fact that the name of *Alcippe brunnea* Gould had been originally given to the Formosan bird. The Chinese form must stand as :—

SCHENIPARUS SUPERCILIARIS (David).

Ixulus superciliaris David, Ann. Sci. Nat. (5) xix. art. 9, p. 4 (1874).

Alcippe brunnea David et Oustal. (nec Gould), Ois. Chine, p. 217 (1877).

The very brief description given by David in his original reference merely says : "Ayant doubles sourcils (cendrés et noir) et le dos olive." This diagnosis might apply to *S. brunneus*.

Later, in 'Les Oiseaux de la Chine,' David and Oustalet considered that *I. superciliaris* David was synonymous with *A. brunnea* Gould, but they evidently had no Formosan birds for comparison, and the description in this work is

obviously taken from Chinese examples. the throat, middle of the breast, and belly being described as *whitish*.

Under these circumstances David's name of *I. superciliaris* should be retained for the Chinese form, for, though his original brief description does not mention any of the characteristics which distinguish the Chinese bird from the *A. brunnea* Gould, it is certain that his type specimen came from Foh-kien, whence we have numerous examples.

85. **STACHYRHIDOPSIS PRÆCOGNITUS* (Swinh.).

Stachyrhis præcognitus Swinh. Ibis, 1866, p. 310.

Stachyridopsis ruficeps Sharpe, Cat. Birds B. M. vii. p. 598 (1883) [part.] ; La Touche (nec Blyth), Ibis, 1895, pp. 314, 332.

a-c. ♂. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

In his paper on the birds of Hainan (*cf.* P. Z. S. 1900, p. 476), Ogilvie-Grant identified a single specimen from that island as *S. præcognitus*, and at the same time drew attention to the distinctive characters of the Chinese form, but refrained from giving it a name.

Subsequently, in the 'Bulletin' of the British Ornithologists' Club [xiv. pp. 8 & 9 (1903)], Mr. Rothschild, having received twelve specimens from Mt. Wuchi, described the Hainan bird as a distinct subspecies, and at the same time gave the characteristics of three other allied forms, viz. :—*S. ruficeps* (Blyth), *S. rufifrons* (Hume), and *S. præcognitus* (Swinh.). He, however, entirely ignored the Chinese race, which has quite as good a claim as the others to be recognised as distinct. Thanks to Mr. C. B. Rickett, we have now a very large series of the Chinese form.

S. ruficeps and its allies may be briefly characterized as follows :—

(1) *S. RUFICEPS* (Blyth).

Crown light chestnut, which extends over the nape ; upper parts warm brownish olive ; throat and under parts yellow, inclining to buff on the breast ; sides and flanks tawny-olive.

Hab. Nepal and Sikkim to Assam.

(2) *S. SINENSIS*, subsp. n.

Crown light chestnut, which does not extend over the nape, and without black shafts to the feathers; upper parts cold greyish olive; throat yellowish, middle of breast and belly pale whitish olive, sides and flanks greyish olive.

Hab. China.

(3) *S. RUFIFRONS* (Hume).

Crown light chestnut, which does not extend over the nape, and with more or less marked black shafts to the feathers; throat whitish; upper parts brownish olive: under parts pale tawny or tawny-olive washed with buff on the chest and inclining to whitish on the middle of the chest and belly.

Hab. Ranging from the lower hills of Sikhim to Pegu and Tenasserim.

(4) *S. PRÆCOGNITUS* (Swinh.).

Crown dark chestnut, which extends over the nape; upper parts dark brownish olive; throat rather bright yellow; sides and flanks greyish olive, inclining to pale yellowish on the middle of the breast and belly.

Hab. Formosa.

(5) *S. GOODSONI* Rothsch.

Differs slightly from *S. præcognitus* in having the upper parts rather darker and of a cold greyish olive tinge, as in *S. sinensis*.

According to Mr. Rothschild, the throat is of a brighter yellow than in *S. præcognitus*, but in our single Hainan example this character is not apparent.

Hab. Hainan.

86. **MYIOPHONEUS INSULARIS* Gould.

Myiophonus insularis Gould, P. Z. S. $\frac{1}{2}$ 1862, p. 280; id. B. Asia, iii. pl. 28 (1864); Sharpe, Cat. Birds, B. M. vii. p. 11 (1883); La Touche, Ibis, 1898, p. 357.

Myiophonus insularis Swinh. Ibis, 1863, p. 277.

a. ♀. Ho Ho Mt., 5000 ft., March 1906.

Iris black or very dark brown; bill and feet black.

This species of Whistling-Thrush is peculiar to Formosa, where it is confined to the mountains.

87. *MALACIAS AURICULARIS (Swinh.).

Kittacincla auricularis Swinh. Ibis, 1864, p. 361.

Sibia auricularis Selater, op. cit. 1866, p. 109, pl. iv.; Swinh. op. cit. 1866, pp. 400, 401, 410; La Touche, op. cit. 1895, pp. 314, 321, 330.

Malacias auricularis Sharpe, Cat. Birds B. M. vii. p. 105 (1883).

a-m. ♂ ♀. Racu Racu Mts., 6000-7000 ft., Jan., Feb. 1906.

n-q. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

Iris brown; bill black; feet yellowish flesh-coloured.

It is a question whether this species of "*Sibia*" ought not to be placed in a separate genus, the extremely elongated ear-coverts rendering it very distinct from the typical species of *Malacias* and *Lioptila*. It is peculiar to Formosa, where it frequents the wooded hills.

88. *ACTINODURA MORRISONIANA Grant.

Actinodura morrisoniana Grant, Bull. B. O. C. xvi. p. 119 (1906).

a, b. ♂ ♀. Mt. Morrison, 8000 ft., Jan. 1906. (*Types of the species.*)

Adult male and female. Top and sides of the head deep chestnut-brown; chin and throat paler chestnut, the feathers with rufous-buff sides, giving these parts a somewhat streaked appearance; upper mantle, sides of the neck and breast brownish grey, streaked with white; rest of the back reddish olive with fine indistinct cross-bars; belly and under tail-coverts reddish brown, streaked with rusty-buff; wings black, barred with rufous, the primaries margined with white along the terminal portion of the outer web; bastard-wing and greater wing-coverts black, edged with grey; the rest of the wing-coverts and scapulars reddish olive; tail-feathers black barred with rufous at the base, grey towards the tip, and tipped with white.

♂. Total length ca. 7.0 inches; wing 3.3; tail 3.3; tarsus 1.1.

♀. Total length ca. 7.0 inches; wing 3.1; tail 3.1; tarsus 1.1.

This remarkably distinct bird will not need comparison with any previously described species, the coloration being so strikingly different.

On looking through the species of *Actinodura* in the British Museum I compared the Central Formosan bird with *A. egertoni* Gould, which is perhaps its nearest ally. This led to my looking rather closely over the large series included under the latter heading, and I find that three fairly well-marked forms are represented in it, viz. :—

(1) *ACTINODURA EGERTONI* Gould.

Hab. Nepal, Sikhim, Daffa Hills, Shengorh Peak (*Godwin-Austen*).

(2) *ACTINODURA KHASIANA* Godwin-Austen.

Actinura khasiana Godwin-Austen, J. As. Soc. Beng. xlv. pt. ii. p. 76 (1876).

Hab. Shillong; Naga and Khasia Hills; Manipur.

(3) *ACTINODURA RIPPONI*, subsp. n.

Hab. Mount Victoria, Chin Hills, 6000–7000 feet.

The differences between the three forms may be briefly tabulated as follows :—

<i>A. egertoni</i> Gould.	<i>A. khasiana</i> Godwin-Austen.	<i>A. ripponi</i> , subsp. n.
<i>Forehead</i> .—Dark chestnut, extending on to the crown.	Rufous, usually not extending beyond the eye:	Rufous, usually not extending beyond the eye.
<i>Crown</i> .—Dark ash-grey.	Light ash-grey.	Dark ash-grey.
<i>Back</i> .—Reddish olive.	Ochraceous.	Greyish olive.
<i>Middle tail-feathers</i> .—Dark bars usually very faint.	Dark bars usually distinct.	Dark bars usually distinct.

In a very large series the colour of the back is quite constant, and the three forms may easily be separated by this character alone.

89. **YUHINA BRUNNEICEPS* Grant.

Yuhina brunneiceps Grant, B. O. C. xvi. p. 121 (1906).

a, b. ♂ ♀. Racu Racu Mts., 6000 ft., Feb. 1906. (*Types of the species.*)

c-e. ♂. Racu Racu Mts., 6000 ft., Jan. 1906.

Adult male and female. Top of the head and pointed crest

reddish brown, bordered on either side by a black stripe commencing above the lores and continued along the sides of the occiput; lores, feathers above the eye, and the more or less concealed occipital feathers whitish; cheeks and ear-coverts yellowish white, bordered all round by a narrow black band; rest of the upper parts dull olive-brown; under parts yellowish white, the chin and throat with small arrow-shaped black markings at the ends of the shafts; the sides and flanks streaked with rufous; quills and tail brownish black, margined externally with dull olive-brown; wing-coverts like the back; axillaries and under wing-coverts white. Iris red; bill black; feet yellowish brown.

♂. Total length ca. 4·5 inches; wing 2·5; tail 1·9; tarsus 0·7.

♀. Total length ca. 4·5 inches; wing 2·5; tail 1·7; tarsus 0·75.

I am not quite satisfied that the present species has been correctly placed in the genus *Yuhina*; for though it possesses all the more marked characteristics of that genus—such as the lengthened pointed crest and the shape of the wing and tail, &c.—it has proportionately a much more slender bill. Though very distinct in colour from all previously described species of *Yuhina*, it is most nearly allied to *Y. nigriventum* Hodgs.

90. **HERPORNIS TYRANNULUS* Swinh.

Herpornis xantholeuca Swinh. (nec Hodgs.) Ibis, 1863, p. 208.

Herpornis xanthochlora Swinh. op. cit. 1863, p. 293.

Herpornis tyrannulus Swinh. op. cit. 1870, p. 347, pl. x.; id. P. Z. S. 1871, p. 373.

a. ♀. Ho Ho Mt., 5000 ft., Feb. 1906.

Iris ruby-red; bill creamy-white at the base; feet yellowish flesh-coloured.

This form of *H. xantholeuca* Hodgs. is distinguishable only on account of its somewhat smaller size. We have examples from Formosa, Hainan, and Foh-kien.

91. **LIOCICHLA STEERI* Swinh.

Liocichla steeri Swinhoe, Ibis, 1877, p. 474, pl. xiv. ;
La Touche, op. cit. 1895, pp. 321, 332.

a-i. ♂ ♀. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

k. ♀. Ho Ho Mt., 5000 ft., Feb. 1906.

Iris brown; bill blackish; feet olive-brown.

The sexes of Steere's Hill-Tit do not differ from one another in plumage.

The above-mentioned examples agree in every respect with the type in the British Museum. The sex of the latter specimen is not recorded, nor the exact locality in Formosa whence it was procured by Professor Steere.

La Touche obtained a single female specimen on the 13th of November, 1893, in the mountain-forests near Bangkimtsing, South Formosa.

92. †*SUTHORA BULOMACHUS* Swinh.

Suthora bulomachus Swinh. Ibis, 1866, pp. 298-303, pl. ix. ;
Sharpe, Cat. Birds B. M. vii. p. 490 (1883) ; La Touche, Ibis,
1898, p. 361.

The Formosan Crow-Tit is peculiar to the island, where it is resident in the north. Swinhoe's types (cage-birds) were bought by him on the road from Tainan (Taiwanfoo) to Takow, in South Formosa. Several specimens were collected by Holst.

93. **SUTHORA MORRISONIANA* Grant.

Suthora morrisoniana Grant, Bull. B. O. C. xvi. p. 119
(1906).

a. ♂. Mt. Morrison, 9000 ft., Jan. 1906. (*Type of the species.*)

Adult male. General colour above dull yellowish olive, shading into dull orange-buff on the crown, forehead, and rump; *no black band above the eye*; a short band of lengthened white feathers behind the eye; checks greyish white, slightly mottled with dusky; chin and throat black; sides of the breast and flanks like the back, but paler and more orange; middle of the breast and belly and the under tail-coverts creamy white; axillaries, under wing-coverts, and the inner

edges of the quills white; wings much as in *S. verreauxi* Sharpe, with the outer margins to the quills orange-buff; tail similar to that of *S. nipalensis* Hodgs. Iris red; bill pink.

Total length ca. 4.0 inches; wing 1.9; tail 2.2; tarsus 0.7.

This distinct Crow-Tit, of which only one adult male example was procured, is perhaps most nearly allied to *S. verreauxi* Sharpe, from China, and *S. craddocki* Bingham, from the Southern Shan States. From both these the Formosan bird is distinguished by the yellowish olive colour of the upper parts, sides of the breast and flanks, as well as by other characters.

PYCNONOTIDÆ.

94. †PYCNONOTUS SINENSIS (Gmel.).

Ixos sinensis Swinhoe, Ibis, 1863, p. 289.

Pycnonotus sinensis Sharpe, Cat. Birds B. M. vi. p. 149 (1881); La Touche, Ibis, 1895, p. 333; 1898, p. 365.

The Chinese Bulbul is resident all over the lower hills and plains, except at the South Cape, where its place is taken by *P. taiwanus* Styan.

95. †PYCNONOTUS TAIWANUS Styan.

Pycnonotus taiwanus Styan, Ibis, 1893, p. 470; 1894, p. 337, pl. ix.; La Touche, op. cit. 1895, pp. 328, 329, 333.

This Bulbul has apparently a most restricted range, and, so far, has only been found at the South Cape, the southernmost point of Formosa. Only three examples are known: the type in Mr. Styan's collection, and two shot by La Touche. One of the latter skins is now in the British Museum.

96. *HYPSPIPETES NIGERRIMUS Gould.

Hypsipetes nigerrima Gould, P. Z. S. 1862, p. 282; Swinh. Ibis, 1863, p. 287; Gould, B. Asia, iii. pl. 12 (1864); Sharpe, Cat. Birds B. M. vi. p. 41 (1881); La Touche, Ibis, 1895, pp. 314, 321, 324, 333; 1898, p. 365.

a, b. ♂. Ho Ho Mt., 5000 ft., Feb., March 1906.

c-g. ♂. Kiu-Kong-Chin Mt., 5000 ft., March 1906.

Iris dark brown; bill, feet, and nails coral-red.

This Black Bulbul is peculiar to Formosa and resident in

the mountains of the interior. It is a partial migrant, disappearing from North Formosa in winter, and apparently retiring to the south of the island. It no doubt breeds throughout the hilly districts from north to south.

97. **SPIZIXUS CINEREICAPILLUS* Swinh.

Spizixos semitorques Swinh. (nec Swinh. 1861) Ibis, 1863, p. 290.

Spizixus cinereicapillus Swinh. P. Z. S. 1871, p. 370; La Touche, Ibis, 1895, p. 320.

Spizixus cinereiceps La Touche, t. c. pp. 325, 333.

a. ♂. Racu Racu Mts., 6000 ft., Feb. 1906.

b-f. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

Iris reddish brown; bill cream-coloured; feet brown.

The Grey-headed Mountain-Bulbul is resident in the mountains and hills of Central and South Formosa.

According to Hartlaub, this species has been found in Hainan.

CAMPOPHAGIDÆ.

98. **GRAUCALUS REX-PINETI* Swinh.

Graucalus rex-pineti Swinh. Ibis, 1863, p. 265; 1866, p. 402; Sharpe, Cat. Birds B. M. iv. p. 35 (1879).

a-f. ♂ ♀ et ♂ imm. Ho Ho Mt., 5000 ft., Feb., March.

Iris brown; bill and feet black.

This Cuckoo-Shrike inhabits the mountain-forests of the interior.

99. **PERICROCOTUS GRISEIGULARIS* Gould.

Pericrocotus griseigularis Gould, P. Z. S. 1862, p. 282; Swinh. Ibis, 1863, p. 263; Gould, B. Asia, ii. pl. 3 (1864); Sharpe, Cat. Birds B. M. iv. p. 83 (1879); La Touche, Ibis, 1895, pp. 321, 323, 334.

a-f. ♂ ♀. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

g-m. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

Iris dark brown; bill and feet black.

The colour of the breast in the males of this Minivet varies considerably in intensity from orange-vermilion to deep orange-vermilion. Examples from Hainan and China differ

in no way from typical Formosan specimens, and these localities should therefore be added [*cf.* Sharpe, Hand-l. B. iii. p. 302 (1901)].

100. *PERICROCOTUS CINEREUS* Lafresn.

Pericrocotus cinereus Swinh. Ibis, 1863, p. 263.

According to Swinhoe, this Minivet occurs in Formosa on migration; he once saw a small flock on the 5th of September at Tainan, S.W. Formosa.

MUSCICAPIDÆ.

101. *HEMICHELIDON SIBIRICA* (Gmel.).

Hemichelidon sibirica La Touche, Ibis, 1898, p. 367.

La Touche shot a single specimen of the Sooty Flycatcher near Tamsui on the 4th of November.

102. *ALSEONAX LATIROSTRIS* (Raffl.).

Hemichelidon latirostris Swinh. Ibis, 1863, p. 262.

The Brown Flycatcher visits Formosa on migration. Swinhoe was no doubt mistaken in calling it a "summer visitant."

103. *MUSCICAPA GRISEICTICTA* (Swinh.).

Hemichelidon griseisticta Swinh. Ibis, 1863, p. 262.

Like the last species, this Flycatcher no doubt only visits Formosa on migration and is not a summer visitant.

104. **CYORNIS VIVIDA* Swinh.

Cyornis vivida Swinh. Ibis, 1864, p. 363; 1866, p. 393, pl. xi.

Nittara vivida Sharpe, Cat. Birds B. M. iv. p. 463 (1879).

a, b. ♂. Racu Racu Mts., 6000 ft., Jan., Feb. 1906.

c, d. ♂ ♀. Ho Ho Mt., Feb., Mar. 1906.

Iris dark brown; bill black; feet brown.

This Blue Flycatcher is peculiar to the mountains of Formosa. The closely allied but larger form from Tenasserim has now been separated under the name *C. oatesi* (Salvad.). The males are much alike, except in size; but the females of the latter are, as a rule, much more olive and less grey on the upper parts than is the case in Formosan specimens.

105. POLIOMYIAS LUTEOLA (Pall.).

Erythrosterna leucura Swinh. (nec Gmel.) Ibis, 1866, p. 313.

Swinhoe states that he obtained a specimen from Central Formosa, but we have not been able to trace what became of it.

106. *MUSCICAPULA HYPERYTHRA (Blyth).

Siphia innexa Swinh. Ibis, 1866, p. 394.

Digenia superciliaris Swinh. P. Z. S. 1871, p. 381.

a. ♂. Ho Ho Mt., 5000 ft., Feb. 1906.

Formosan examples of this small Flycatcher are apparently indistinguishable from typical Indian specimens of *M. hyperythra* (Blyth). The species appears to inhabit the interior of the island.

107. *XANTHOPYGIA AFFINIS Grant.

Ruticilla fuliginosa Swinh. (nec Vig.) Ibis, 1863, p. 298.

Rhyacornis fuliginosa La Touche, op. cit. 1898, p. 362.

Xanthopygia affinis Grant, B. O. C. xvi. p. 118 (1906).

a, b. ♂ ♀. Racu Racu torrent, 6000 ft., Jan. 1906.
(Types of the species.)

c-i. ♂ ♀. Racu Racu torrent, 3000 to 7000 ft., Jan., Feb. 1906.

Adult male. Closely resembles the male of *X. fuliginosa* (Vigors), but the lores are less black, being scarcely darker than the crown, and the tips of the tail-feathers are usually dusky. Iris dark brown; bill black; feet brownish. Total length ca. 5.5 inches; wing 3.2; tail 2.3; tarsus 0.95.

Adult female. Differs from the female of *X. fuliginosa* in having the under parts much greyer, with the white squamate markings much less pronounced and confined to the middle of the belly; the tail-feathers with much less white at the base; the white on the outer pair not extending to the terminal half. Total length ca. 5.5 inches; wing 3.0; tail 2.2; tarsus 0.95.

A male and two females of the Formosan Plumbeous Redstart were collected by Swinhoe and identified as

X. fuliginosa. These, as well as a female example in the Rickett Collection procured by Mr. La Touche in N. Formosa, are perfectly similar to the specimens collected by Mr. Goodfellow.

108. CYANOPTILA CYANOMELÆNA (Temm.).

Niltava cyanomelæna La Touche, Ibis, 1898, p. 367.

La Touche procured a single female of the Japanese Blue Flycatcher near Tamsui on the 28th of October.

109. *HYPOTHYMIS AZUREA (Bodd.).

Myiagra azurea Swinh. Ibis, 1863, p. 261; La Touche, Ibis, 1895, p. 334.

Hypothymis azurea La Touche, Ibis, 1898, p. 367.

a. ♂. Ho Ho Mt., 5000 ft., March 1906.

The Black-naped Flycatcher is resident throughout the lower hills and on the plains.

110. †TERPSIPHONE PRINCEPS (Temm.).

Tchitrea principalis Temm.; Swinh. Ibis, 1863, p. 260.

Swinhoe records the capture of a female Paradise Flycatcher at Tamsui in April 1862. There is a male in the British Museum also procured by Swinhoe in May 1866.

111. *CRYPTOLOPHA FULVIFACIES (Swinh.).

Abrornis fulvifacies Swinh. P. Z. S. 1870, p. 132.

a, b. ♂ ♀. Racu Racu Mts., 7000 ft., Feb. 1906.

A male and female of this Flycatcher-Warbler appear to be perfectly similar to typical examples from China. This species does not seem to have been previously met with in Formosa.

HIRUNDINIDÆ.

112. †HIRUNDO STRIOLATA Boie.

Hirundo daürica Swinh. (nec L.) Ibis, 1863, p. 255.

Cecropis striolata Swinh. P. Z. S. 1871, p. 346.

Hirundo nipalensis? La Touche, Ibis, 1895, p. 334.

Hirundo striolata La Touche, Ibis, 1898, p. 367.

Hirundo substriolata Sharpe (nec Hume), Cat. Birds B. M. x. p. 163 (1885).

The Striated Swallow is resident on the lower hills and on the plains.

113. †HIRUNDO GUTTURALIS Scop.

Hirundo gutturalis Swinh. Ibis, 1863, p. 255; Sharpe, Cat. Birds B. M. x. p. 134 (1885); La Touche, Ibis, 1895, p. 334; 1898, p. 367.

The Eastern Swallow is abundant in summer and is most probably a resident in the south of the island.

114. †COTILE SINENSIS (J. E. Gray).

Cotyle sinensis Swinh. Ibis, 1863, p. 257; Sharpe, Cat. Birds B. M. x. p. 104 (1885); La Touche, Ibis, 1895, p. 335; 1898, p. 367.

The Indian Sand-Martin is resident both in North and South Formosa.

PITTIDÆ.

115. †PITTA NYMPHA Temm. & Schl.

Pitta oreas Swinh. Ibis, 1864, p. 428; Gould, B. Asia, v. pl. 65 (1871).

Pitta nympha Selater, Cat. Birds B. M. xiv. p. 425 (1888); Seebohm, Ibis, 1895, p. 213.

This *Pitta* inhabits the mountain-forests of Formosa.

PICIDÆ.

116. *DENDROCOPUS INSULARIS (Gould).

Picus insularis Swinh. Ibis, 1863, p. 390; Gould, B. Asia, vi. pl. 16 (1864).

Dendrocopus insularis Hargitt, Cat. Birds B. M. xviii. p. 272 (1890).

a. ♂. Racu Racu Mts., 7000 ft., Feb. 1906.

b. ♂. Ho Ho Mt., 5000 ft., March 1906.

Examples of this Woodpecker from Formosa are slightly smaller (wing 5.2 inches) than birds procured by La Touche and Rickett in N.W. Foh-kien (wing 5.5-5.6 inches).

117. †GECINUS TANCOLO Gould.

Gecinus tancolo Gould, P. Z. S. 1862, p. 283; id. B. Asia, vi. pl. 35 (1864).

Gecinus tancola Swinh. Ibis, 1863, p. 389.

Gecinus guerini Hargitt, Cat. Birds B. M. xviii. p. 55 (1890) [part.].

Swinhoe procured this Green Woodpecker in the mountains near Tamsui. Unlike the Green Woodpecker of the mainland it apparently does not descend to the lower hills and plains, for La Touche never heard it there. Formosan birds are on the average rather smaller than Chinese (Foh-kien) specimens—the wing of the former measuring from 5·2–5·4 inches, of the latter 5·3–5·8.

118. **IYNGIPICUS KALEENSIS* (Swinh.).

Picus kaleensis Swinh. Ibis, 1863, p. 390.

Iyngipicus scintilliceps La Touche (nec Swinh.), Ibis, 1895, p. 336.

Iyngipicus kaleensis Hargitt, Cat. Birds B. M. xviii. p. 315 (1890).

a. ♂ [marked ♀]. Mt. Morrison, 5000 ft., Jan. 1906.

b. ♀. Ho Ho Mt., 5000 ft., Feb. 1906.

Iris red; bill pale slate-coloured at the base, shading into black at the tip; feet slate-coloured.

Immature examples of this Pigmy Woodpecker have the sides and flanks distinctly spotted.

119. *IYNGIPICUS WATTERSI* Salvad. & Gigl.

Iyngipicus wattersi Salvad. & Gigl. Atti Accad. Tor. xx. p. 825 (1885); Hargitt, Cat. Birds B. M. xviii. p. 317 (1890).

The description of this species was taken from an "adult male" specimen, the exact locality in Formosa whence it was obtained being unknown. Can it be the immature male of *I. kaleensis*? A young bird, procured by Mr. Goodfellow and certainly the young of *I. kaleensis*, seems to agree exactly with the description of the type of *I. wattersi*. Hargitt appears, however, to have examined the type-specimen and regarded it as a distinct species.

CAPITONIDÆ.

120. **CYANOPS NUCHALIS* (Gould).

Megalama nuchalis Gould, P. Z. S. 1862, p. 283; Swinh. Ibis, 1863, p. 387; Gould, B. Asia, vi. pl. 49 (1864).

Cyanops nuchalis La Touche, Ibis, 1895, pp. 321, 324, 336.

a. ♀. Mt. Morrison, 8000 ft., Jan. 1906.

b-d. ♂ ♀. Racu Racu Mts., 7000-8000 ft., Jan. 1906.

e-h. ♂ ♀. Ho Ho Mt., 5000 ft., Feb., March 1906.

i, k. ♂. Kiu-Kong-Chin, 5000 ft., March 1906.

Iris brown or dark brown; bill black, slate-coloured on the sides; feet greyish-green.

The Formosan Barbet is peculiar to the island and inhabits the mountain-forests of the interior.

CUCULIDÆ.

121. †*CUCULUS SATURATUS* Hodgs.

Cuculus kelungensis Swinh. Ibis, 1863, p. 394.

Cuculus canorus Swinh. (nec Linn.) Ibis, 1863, p. 396; id. P. Z. S. 1863, p. 265.

Cuculus monosyllabicus Swinh. Ibis, 1865, p. 395.

Cuculus striatus Drap.; Swinh. P. Z. S. 1871, p. 395.

Cuculus intermedius Vahl; Shelley, Cat. Birds B. M. xix. p. 252 (1891); La Touche, Ibis, 1898, p. 370.

The Himalayan Cuckoo is a summer-visitor to North Formosa and probably to other hilly parts of the island.

122. *CUCULUS POLIOCEPHALUS* Lath.

Cuculus tamsuicus Swinh. Ibis, 1865, p. 107.

Cuculus poliocephalus Swinh. P. Z. S. 1871, p. 395.

Swinhoe reports the occurrence of the Small Cuckoo at Tamsui, but the specimens cannot now be traced.

123. †*CENTROPUS JAVANICUS* Dumont.

Centropus viridis (Scop.); Swinh. Ibis, 1863, p. 392.

Centropus bengulensis (Gmel.); Swinh. (nec Gmel.) P. Z. S. 1871, p. 393; Shelley, Cat. Birds B. M. xix. p. 352 (1891) [spec. *p''-s''*]; La Touche, Ibis, 1895, p. 336; 1898, p. 371.

Centropus javanicus Shelley, Cat. Birds B. M. xix. p. 354 (1891) [spec. *f¹-n¹*].

This Lark-heeled Cuckoo is resident throughout Formosa.

CYPSELIDÆ.

124. †CYPSELUS PACIFICUS (Lath.).

Cypselus vittatus Jard. & Selby; Swinh. Ibis, 1863, p. 253.

Cypselus pacificus Swinh. P. Z. S. 1871, p. 345.

Micropus pacificus Hartert, Cat. Birds B. M. xvi. p. 448 (1892).

The Siberian Swift visits S.W. Formosa in summer.

125. CYPSELUS SUBFURCATUS Blyth.

Cypselus subfurcatus Swinh. Ibis, 1863, p. 254; La Touche, Ibis, 1895, p. 336; 1898, p. 370.

Swinhoe observed the Malayan House-Swift nesting on Ape's Hill, Takow, in South Formosa. La Touche also saw it in the same locality in November and at Tamsui on the 27th of May.

CAPRIMULGIDÆ.

126. †CAPRIMULGUS MONTICOLA Frankl.

Caprimulgus stictomus Swinh. Ibis, 1863, p. 250; La Touche, Ibis, 1898, p. 370.

Caprimulgus monticola Hartert, Cat. Birds B. M. xvi. p. 547 (1892).

Franklin's Nightjar is resident in Formosa.

ALCEDINIDÆ.

127. *ALCEDO ISPIDA Linn.

Alcedo bengalensis Gmel.; Swinh. Ibis, 1863, p. 260; La Touche, Ibis, 1895, p. 336; 1898, p. 370.

Alcedo ispida Sharpe, Cat. Birds B. M. xvii. p. 141 (1892).

a. ♀. Rinkiho (Lim-ki-po), March 1906.

Iris dark brown; bill reddish-black; feet bright coral-red.

The European Kingfisher is common and resident throughout Formosa.

128. †HALCYON COROMANDUS (Lath.).

Halcyon coromandelianus (Scop.); Swinh. Ibis, 1863, p. 259.

Halcyon coromandus Sharpe, Cat. Birds B. M. xvii. p. 217 (1892).

The Ruddy Kingfisher inhabits the lakes and rivers of the interior of Formosa.

[To be continued.]

VII.—Notices of recent Ornithological Publications.

1. 'Annals of Scottish Natural History.'

[The Annals of Scottish Natural History. Nos. 59 & 60, July and October 1906.]

The first paper on our subject is by Mr. W. Eagle Clarke, who enumerates and remarks upon the rare visitants which occurred at Scottish observation-stations in the first half of 1906. These are the Rustic Bunting, the Desert-Wheatear, the Ortolan Bunting, and an example of the remarkably grey Asiatic race of the Skylark. In the October number Mr. Clarke records a new visitor to Great Britain, namely, the Red-rumped Swallow (*Hirundo rufula*), observed at Fair Isle on June 2nd in a party of Common Swallows and picked up dead some ten days afterwards. An example of this southern species was obtained at Heligoland on May 30th, 1855, and had doubtless overshot the mark on the spring-migration, as in the present case. It may be noted that under the name *H. daurica* Prof. R. Collett has recorded the occurrence of a closely-allied—or perhaps even the same—species at Syd Varanger on May 31st, 1905. Later (p. 236), as the result of a very recent visit to Fair Isle, Mr. Clarke and his companion Mr. Kinnear record, among other rarities, the Scarlet Grosbeak, the Red-breasted Flycatcher, the Little and Ortolan Buntings, the Yellow-browed Warbler, and—for the first time in Scotland—the Reed-Warbler.

Since this was written, Mr. Clarke has exhibited at the British Ornithologists' Club an example of *Phylloscopus tristis* from Suliskerry (26th Sept., 1902), also new to the British avifauna (*cf.* Bull. B. O. C. xix. p. 18). Mr. John